## Claims

- [c1] A method of excitation for use during an NMR examination comprising adiabatically conditioning at least a portion of a body with a plurality of radio frequency pulses.
- [c2] A method as in claim 1 wherein adiabatically conditioning at least a portion of a body comprises applying said plurality of radio frequency pulses in a sigmoidal manner.
- [c3] A method as in claim 2 wherein said plurality of radio frequency pulses are applied in a sigmoidal manner about a ramp.
- [c4] A method of excitation for use during an NMR examination comprising:
  subjecting a body to an orienting magnetic field;
  adiabatically conditioning at least a portion of said body with a first plurality of radio frequency pulses;
  exciting said body with a second plurality of radio frequency pulses in a presence of gradient field pulses; and receiving at least one resonance signal emitted from said body in response to said second plurality of radio frequency pulses.

- [c5] A method as in claim 4 wherein adiabatically condition—ing at least a portion of said body comprises dampening by apodization a variation of flip angles to cancel a transversal component of a magnetization.
- [06] A method as in claim 5 wherein said dampening is in a form of a Kaisar Bessel type apodization.
- [c7] A method as in claim 6 wherein said Kaisar Bessel type apodization has a dampening coefficient approximately equal to 3.
- [08] A method as in claim 5 wherein said dampening is in a form of a Hanning apodization.
- [09] A method as in claim 4 wherein said first plurality of radio frequency pulses are determined via a Shinnar Le Roux algorithm.
- [c10] A method as in claim 4 wherein said second plurality of radio frequency pulses are of a steady-state free precession decay type.
- [c11] A method as in claim 4 wherein said second plurality of radio frequency pulses are of a fast spin echo type.
- [c12] A method as in claim 4 wherein said at least one resonance signal is of a steady-state free precession decay

type.

- [c13] A method as in claim 4 wherein said at least one resonance signal is of a fast spin echo type.
- [c14] A method as in claim 4 wherein said first plurality of radio frequency pulses have flip angle amplitudes that are less than a final flip angle amplitude used to attain a magnetization of equilibrium.
- [c15] A method as in claim 4 wherein number of pulses within said first plurality of radio frequency pulses is less than or equal to 10.
- [c16] A method as in claim 4 wherein number of pulses within said first plurality of radio frequency pulses is 8 for a magnetization flip angle of approximately 60°.
- [c17] A method as in claim 4 wherein magnetization flip angle as a result of said first plurality of radio frequency pulses is approximately 60°.
- [c18] A method as in claim 4 wherein said at least one resonance signal corresponds to a 2D plane section of said body.
- [c19] A method as in claim 4 wherein said body is of a cardiac type.

- [c20] A method as in claim 4 further comprising conditioning said body via an adiabatic finishing of radio frequency pulses.
- [c21] A method as in claim 20 wherein said adiabatic finishing of radio frequency pulses are the inverse of said first plurality of radio frequency pulses.
- [c22] A method as in claim 20 further comprising exciting said body with a non-fast excitation-measurement sequence.
- [c23] A magnetic resonance imaging system comprising: a magnet subjecting a body to an orienting magnetic field; and an antennae adiabatically conditioning at least a portion of said body with a first plurality of radio frequency pulses, said antennae exciting said body with a second plurality of radio frequency pulses in a presence of gradient field pulses; said antennae receiving at least one resonance signal

said antennae receiving at least one resonance signal emitted from said body in response to said second plurality of radio frequency pulses.